



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

D5853-9

Job Sheet 207419



Part No: D5853-9

Job Qty: 40 pcs

Part Name: Bushing

Part Weight: 0 lbs

Job Created: 2/25/20

Due Date: 3/6/20

Type: Stock

Status: New

Job Tracking No:

Created By: Jennifer Renwick

Description:

Priority: Medium

Note: URF 20-522 DWG D5853 Rev A IPP Rev. A 2020.01.30 New issue DP Verify DD

Ship Via:

## Bill of Materials

## Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Hardinge - 1	40 pcs	3/6/20	3/6/20	0.50	0.67	Conventional Lathe - 1	SL-134	DAS 33 20/02/29
							Hardinge - 1		9-89
110	QC 2	40 pcs	3/6/20	3/6/20	0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		DAS
							QC 2 - 33		33 20/02/29
							QC 2 - 35		9-89
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 57		
							QC 2 - 62		
							QC 2 - 63		
							QC 2 - 8		
							QC 2 - 66		
							QC 2 - 64		



Container No: S259573



Part: D5853-9

Job No: 207419

Serial No/Batch: S259573

Revision: A

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
CANADA  
TEL.: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

Date: 02/29/20



				QC 2 - 65	
				QC 2 - 5	
				QC 2 - 71	
				QC 2 - 73	
				QC 2 - 69	
				QC 2 - 76	
120 QC 8	40 pcs	3/6/20	0.00 0.00	QC 8 - 12	
				QC 8 - 14	OK 20/02/29
				QC 8 - 17	
				QC 8 - 20	
				QC 8 - 25	
				QC 8 - 3	
				QC 8 - 32	
				QC 8 - 33	
				QC 8 - 35	
				QC 8 - 39	
				QC 8 - 4	
				QC 8 - 44	
				QC 8 - 45	
				QC 8 - 49	
				QC 8 - 58	
				QC 8 - 8	
				QC 8 - 9	
				QC 8 - 68	
				QC 8 - 67	
				QC 8 - 1 (A)	
				QC 8 - 47	
				QC 8 - 40	
				QC 8 - 52	
				QC 8 - 23	
				QC 8 - 57	
				QC 8 - 76	
				QC 8 - 61	
130 Packaging 3-1 - Stock - B4B	40 pcs	3/6/20	0.00 0.00	Packaging 3 - 1 - B4B	ML
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 37 - B4B	DAS
140 QC 21 - SA	40 pcs	3/6/20	0.00 0.00	QC 21 - SA - 21	21
				QC 21 - SA - 70	0.00
Part Op 100 - 1-Machine as per folio FC <u>N/A</u> FOLIO REV: <u>AA</u> DWG REV: <u>A</u> 2-Debur Descriptions: 110 - QC2- Inspect parts off machine FAI/FAIB 120 - QC8- Inspect parts - second check 130 - Identify as per dwg & Stock Location: _____ 140 - QC21- Final Inspection - Work Order Release					

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
M304R0.313	304 SS Round bar .313	2.8400 ft (.071 ea)	100-Hardinge - 1	S 252617

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Hardinge - 1	M304R0.313 Ro.375	3	12	0

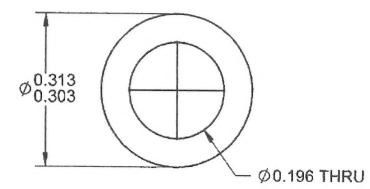
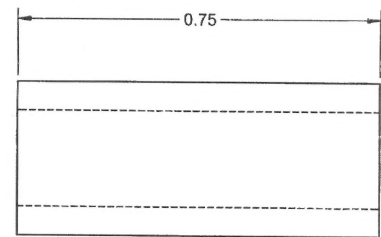
Part Specifications	
Specifications could not be found.	





SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 207419

MCS  
2002-26



**D5853-9 BUSHING**  
(DERIVED FROM AERO DESIGN P/N 70422-04)

- NOTES:**  
1) MATERIAL: AISI 304/316 STAINLESS STEEL ROUND BAR  
PER ASTM A276 OR ASTM A479  
REF DART SPEC M304R  
2) FINISH: NONE  
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
4) UNITS: INCHES UNLESS OTHERWISE NOTED  
5) BREAK SHARP EDGES: 0.005 TO 0.010  
6) IDENTIFICATION: NONE  
7) WEIGHT: 0.01 lbs

UNDER REVIEW

URF 2020-522 20.02.14 (NO)

**RELEASED**  
2020 FEB 18 *YNo*

APPROVED

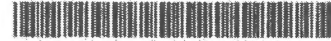
DESIGN	ZF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	REV. A
DRAWN	ZF		
CHECKED	KPT		
MFG. APPR.	DD		
APPROVED	NO		
DE APPR.	CP <i>up</i>	DRAWING NO. <b>D5853</b>	SHEET 6 OF 6
DATE	20.01.24	TITLE <b>BASKET RIM</b>	SCALE NTS
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K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER POHB045671



Items													
Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
9		M304B0.250X4.000			304 Bar .250 X 4.00 : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed -		1/31/20	12 ft	0 ft	12 ft	\$10.0625/ft	\$120.75
10		M304R0.375			304 Round Bar 0.375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed -		1/31/20	12 ft	0 ft	12 ft	\$1.15/ft	\$13.80
11		M2024T3S.063			2024-T3 .063 Sheet : MATERIAL: 2024-T3 ALUMINUM SHEET AS PER QQ-A-250/4 OR AMS-QQ-A-250/4 OR AMS 4037 OR ASTM B209 receive sf	Firmed -		1/31/20	144 sf	0 sf	144 sf	\$12.163472/sf	\$1,751.54
Grand Total:												\$4,972.57	

## Order Notes

### Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable). No Raw Metals from China or Soviet Bloc Countries. (DFARS)
- A026 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program.

A049 supplier awareness.

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 1/23/20 3:01 PM Dart.Lavoie.Chantal



JAN 3 1 2020

DAS  
82  
9-89

## DELIVERY - CLIENT

CO00188756

Product Description	Qty	Weight	UM	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
HEAT : SXD190562 <b>6 ROUND ALU 6061-T6 1 1/4 *</b> RAL-114 5121 1 X 20' POHB045671 LINE 6 HEAT : SXA181600	28.82	20.00	PI_\$CLB		1x20'						
<b>7 ROUND ALU 6061-T6 1 1/2 *</b> RAL-112 5119 1 X 20' POHB045671 LINE 7 HEAT : SXF180576	41.52	20.00	PI_\$CLB		1x20'						
<b>8 ROUND ALU 6061-T6 1 5/8 *</b> RAL-158 5138 1 X 12' POHB045671 LINE 8 HEAT : LOT 23713206	29.23	12.00	PI_\$CLB		1x12'						
<b>9 FLAT SS304 1/4 X 4 (R)</b> FSS-144 3522 1 X 12' R/L POHB045671 LINE 9 HEAT : 524305	40.80	12.00	PI_\$CLB		1x12' R/L						
<b>10 ROUND SS 304 3/8 (R)</b> RSS-38 5768 1 X 12' R/L POHB045671 LINE 10 HEAT : 51089	4.51	12.00	PI_\$CLB		1x12'						
<b>11 ALU SHEET .064 (14G) 2024-T3 (4 X 12) DART</b> FEALD-0644122024 12474 3 X 4' X 12' POHB045671 LINE 11 LOT : 32358385 CAST : 894 AC33272-SA-27/01	129.74	144.00	PI2_\$CLB		3x4'x12'						
<b>Note :</b> ATTENTION: MILL TEST REQUIS Chaque item identifier avec : <ul style="list-style-type: none"><li>- Le # PO client</li><li>- Le # d'item</li><li>- Le heat #</li><li>- Emballer les pièces dans carton</li></ul>											

LINE 10

## MATERIAL RECEIPT INSPECTION FORM

 MATERIAL: M304R 0.375  
 DATE: JAN 31 2020

 PO / BATCH NO.: P0113045671  
5252617

 MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 12 FT  
 QUANTITY INSPECTED: 12 FT  
 QUANTITY REJECTED: 0

 THICKNESS ORDERED: 0.375  
 THICKNESS RECEIVED: 0.375  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y N	ASTM A276
CORRECT THICKNESS	<input checked="" type="radio"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y N	51089
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

 CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.  
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: _____	DAS <u>82</u>	SIGNED OFF BY: _____	
DATE: <u>JAN 31 2020</u>	9-85	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

LIME 10

M304R 0.375

P0113045671

# **SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

△ SPECIFICATION: ASTM A276

PART NUMBER: M304R D.DDD  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

9-89  
28  
DAS

**RELEASED**  
01/08/25/14

B	REFORMAT DWG. ADD SPECS (ZN D6-1). REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	JD		
CHECKED	JD	DRAWING NO.	REV. B
MFG. APPR.	JD	M304R	SHEET 1 OF 1
APPROVED	JD	TITLE	SCALE
DE APPR.	JD	304/316 ROUND BAR	NTS
DATE	09.07.15	<small>COPYRIGHT © 2008 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ORIGINALLY INTENDED. WITHOUT PERMISSION FROM DART AEROSPACE LTD.</small>	



5768

RSS-38

27742

**VIRAJ PROFILES LIMITED****VIRAJ**

Works: SURVEY NO.- 25/1, 25/2, 26 & 34, Village- MAAN, Taluka- PALGHAR, Dist.- PALGHAR, MAHARASHTRA -401 506, INDIA,  
e-mail- vielqc@viraj.com

54566

**TEST CERTIFICATE**

<b>ORDER NO</b>	<b>PACKING LIST NO</b>	<b>INSPECTION NO</b>	<b>DATE</b>
P007198	64/75016438/12	100010589233	25.09.2018
		<b>GRADE</b>	<b>HEAT No</b>
		304/304L	51089

**BUNDLE NO :**

1100971024, 1100971025, 1100971026, 1100971027, 1100971028, 1100971029, 1100971030, 1100971031, 1100971032, 1100971033, 1100971034, 1100971035,

**DESCRIPTION**

STAINLESS STEEL BRIGHT BARS

**COLD DRAWN POLISHED - 2H**

SIZE	SHAPE	TOLERANCE	LENGTH	PIECES	WEIGHT
3/8"	ROUND	ASTM A484	12' - 14'	2802	12,688.000 LB

**CHEMICAL ANALYSIS**

%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Cu	%Mo	%Co	%N2
0.0180	1.620	0.310	0.0240	0.0360	18.150	8.070	0.640	0.230	0.180	0.08000

**TEST RESULTS**

0.2% yield strength ksi	Tensile Strength ksi	Elongation %	Reduction Of Area %	Hardness BHN	Grain Size NOS
93.0	109.0	41.0	69.0	223.0	7.0

**SPECIFICATION:**

MATERIAL CONFIRMS TO DIN EN 10088-3:2014, WNR 1.4301/1.4307, EN 10272 COND-A & ASTM A182/A182M-18, ASTM A276/A276M-17 COND A, ASTM A479/A479M-18 COND A, ASTM A193/A193M-17, B8 CL-1, A320/A320M-15a, B8 CL-1, ASTM A484/A484M-18, A388/A388M-05, ASME SA182-14, SA479-15, SA 193-11 B8 CL-1, SA320-11 B8 CL-1, ASTM A314-2008, IGC SATISFACTORY AS PER ASTM A 262-10 PRACTICE E, AMS 5639H/AMS5647J (EXCEPT MARKING), QQ-S-763F, NACE MR0103/ISO 17945-2015, NACE-MR0175/ISO-15156-2015, SAE-AMS-S-7720A, MIL-S-862-B, AISI 304/304L & UNS#S30400/S30403, CERTIFICATION AS PER EN 10204-3.1.

**REMARKS**

MATERIAL IS FREE FROM MERCURY CONTAMINATION, FREE FROM WELD OR WELD REPAIRS, MICRO-FREE FROM CONTINUOUS CARBIDE NETWORK ON GRAIN BOUNDARIES, MACRO-GOOD, MINIMUM SOLUTION ANNEALING TEMPERATURE 1050C, SOAKING TIME 1/2 HRS, WATER QUENCHED. MELT SOURCE:AOD. WE CONFIRM THAT THE MATERIAL HAS BEEN TESTED AND FOUND TO BE FREE FROM RADIOACTIVE CONTAMINATION. COUNTRY OF ORIGIN: INDIA.

We hereby certify that the material described above has been tested and complies with the terms of order/contract.

**WORKS INSPECTOR**  
**K R K MURTHY**

H: 51089

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

Job: _____  Part No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	<b>DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Water Jet <input type="checkbox"/>            Supplier <input type="checkbox"/>            Quality <input type="checkbox"/> </div> </div>			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
<b>Root Cause</b>  <div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		<b>FAULT CATEGORY</b>  <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced  <input type="checkbox"/> Bending  <input type="checkbox"/> Crushing  <input type="checkbox"/> Cracks  <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist  <input type="checkbox"/> Marks/Chatter  <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination  <input type="checkbox"/> Misaligned/off center  <input type="checkbox"/> BOM/Route  <input type="checkbox"/> Broken/Damage/Defect  <input type="checkbox"/> Incomplete/Unclear Instructions  <input type="checkbox"/> Drill Holes  <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Folio/Program  <input type="checkbox"/> Grain Direction  <input type="checkbox"/> Weld  <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Out of Sequence  <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong  <input type="checkbox"/> Outside Tolerance  <input type="checkbox"/> Drawing  <input type="checkbox"/> Finish  <input type="checkbox"/> Part Lost/Missing  <input type="checkbox"/> Misread         </div> </div>			
Other/Details:					